

## SPECIFICATION

AN ARTICLE DESIGN CREATING SYSTEM AND METHOD OF THE SAME  
TECHNICAL FIELD

5           The present invention relates to an article design  
creating system and method of the same. In particular,  
it relates to a watch design creating system and method  
of the same and to an article supply system based on  
10       digital information processing technique in order to  
directly make an article, originally designed by a  
consumer himself based on his favorite design, by a clock  
maker.

15           In the present invention, when the consumer requests  
service from the clock maker as an article supplier  
through an information communication means, such as the  
internet, magazines, etc., the clock maker sends design  
information in which design specifications are recorded  
through an information communication means or using a  
storage medium. The consumer reads necessary data from  
20       the design information and creates an original design  
information (i.e., a design specification) having his  
favorite design, and sends the original design  
information to the clock maker by utilizing the  
information communication means or by recording the  
25       design information on the storage medium, for example, a  
floppy disk. The clock maker produces a watch based on  
the design specification from the consumer, and provides  
the completed watch to the consumer.

## BACKGROUND ART

30           There is a known mail-order system in which a  
consumer selects his favorite article from a  
predetermined catalog, and orders it through a  
communication line.

35           Further, there is a known TV-order system in which a  
consumer selects his favorite article on the television  
display, and orders it through a communication line.

          In these order sales system, there is a system in

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which the favorite design can be designated by the consumer from several kinds of designs of, for example, a dial-plate of the watch which was previously prepared by the clock maker. Further, there is a particular order system in which designated characters can be printed either on the dial-plate or on a back lid of the watch case, if the consumer orders a large number of the watches.

However, in these order sales system, although some flexibility regarding the design, such as designation of the dial-plate, printing of characters, etc., are available to the consumer, this flexibility is insufficient to give a feeling of satisfaction to the consumer, i.e., creation of an originally-designed watch, of which there is only one in the world, to the consumer.

#### DISCLOSURE OF THE INVENTION

The object of the present invention aims to be able to produce an originally-designed and full-scale watch in which a consumer directly accesses an article supplier (for example, a clock maker) through an information communication means, such as an information communication network, utilizes design software including design basic information provided by the clock maker, and executes the design of the watch on the display of a consumer's personal computer.

In the first aspect of the present invention, an article design creating system is characterized by comprising: means for providing parts digital information indicating article (for example, a watch) constituent parts, which can be provided from the article supplier (for example, the clock maker) to the consumer, and the design software (or the design basic information based on the design software) to combine parts digital information on the information communication means (for example, the information communication network); means for accepting an article originally-designed information created by combining the parts digital information, using

the parts digital information and design software from the consumer to the article supplier; and means for producing the article in the article supplier based on the originally-designed information received from the consumer.

5 In the second aspect of the present invention, an article design creating method is characterized by comprising: a process for providing parts digital information indicating article (for example, a watch)  
10 constituent parts, which can be provided from the article supplier (for example, the clock maker) to the consumer, and the design software (or the design basic information based on the design software) to combine the parts digital information on the information communication  
15 means (for example, the information communication network); a process for accepting an article originally-designed information created by combining parts digital information, using the parts digital information and design software from the consumer to the article  
20 supplier; and a process for producing the article in the article supplier based on the originally-designed information received from the consumer.

25 In the third aspect of the present invention, a computer readable storage medium recording a program to execute the following processes is characterized by comprising: a process for providing parts digital information indicating article (for example, a watch)  
30 constituent parts, which can be provided from the article supplier (for example, the clock maker) to the consumer, and the design software (or the design basic information based on the design software) to combine the part digital information on the information communication means (for example, the information communication network); a  
35 process for accepting an article originally-designed information created by combining parts digital information, using the parts digital information and design software from the consumer to the article

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supplier; and a process for producing the article in the article supplier based on the originally-designed information received from the consumer.

5 In the fourth aspect of the present invention, a computer readable storage medium recording a program to execute the following processes is characterized by comprising: a process for providing parts digital information indicating an article (for example, a watch) constituent parts to create an article (for example, a watch) to the consumer; a process for selecting parts digital information corresponding to the consumer's desired article design from the parts digital information in the consumer's side; and a process for recording parts digital information selected by the consumer on the  
10 predetermined storage medium.  
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#### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a flowchart of basic operation according to the present invention (No. 1).

20 Figure 2 is a flowchart of basic operation according to the present invention (No. 2).

Figure 3 is a basic flowchart at a consumer's operation according to the present invention.

Figure 4 shows steps of displaying a main menu.

Figure 5 shows steps of displaying an image check.

25 Figure 6 shows steps of selecting a sample (No1).

Figure 7 shows steps of selecting a sample (No2).

Figure 8 shows steps of selecting a sample (No3).

Figure 9 shows steps of displaying a holding image.

Figure 10 shows steps of preparing an order data.

30 Figure 11 shows steps of confirming color tone.

Figure 12 is a structural view of a system according to the present invention.

Figure 13 is an explanatory view of contents of a storage medium used in the present invention.

35 Figure 14 shows a display of the main menu image.

Figure 15 shows a display of the image check.

Figure 16 shows a display of a result of the image

Figure 17 shows a display of a sample selection image.

Figure 19 shows a display of a sight of dial-plates when selecting the sample.

Figure 20 shows a display of confirmation of the dial-plate when selecting the sample.

Figure 22 shows a display of a read of the dial-plate when selecting the sample.

Figure 24 shows a display of a message input image.

Figure 25 shows a display of hour and minute hands when selecting the sample.

Figure 27 shows a display of a wrist band made of urethane when selecting the sample.

Figure 28 shows a display of a wrist band made of leather when selecting the sample.

Figure 29 shows a display of a crown when selecting  
25 the sample.

Figure 30 shows a display of the holding image.

Figure 31 shows a display of a confirming image.

Figure 32 shows a display of preparing an order data.

30            Figure 33 shows a display of confirming ordered sum  
of money.

Figure 34 shows a display of selecting "HOLD" button.

Figure 35 shows a display of materials of the wrist  
35 band when selecting the sample.

Figure 36 shows a display of hands image when selecting the sample.



samples, and when constituent parts of the custom samples are changed by the consumer to his favorite parts, the creation of the original design information by the consumer becomes easy and effective.

5 Further, the "article constituent parts" are various kinds of parts constituting the article, and the parts are determined based on kinds of the articles. For example, in the case of the wrist watch, the constituent parts are indicated by a watch case, a wrist band, a  
10 buckle, a dial-plate, hands, a crown, etc. The article constituent parts may be defined as either parts for determining an external appearance, or parts for determining function of the watch.

15 Further, regarding the "article", if it is an article in which a consumer can select constituent parts of that article, it is possible to apply the present invention to any articles. For example, the following parts, i.e., accessories, such as a dress, a necktie, etc.; ornaments, such as a necklace, a finger ring, etc.;  
20 a car; a motor bicycle; a furniture; etc., are included in the article. Further, it is possible to design room planning and internal ornaments in a house by the consumer as the original design. Further, it is possible to design audio equipment, such as a stereo, an  
25 amplifier, etc., by the consumer, as the original design. In the embodiment, an "article" is a watch as explained below.

30 Further, the "information communication means" includes all current communication means to communicate with the consumer, for example, an advertisement on a newspaper or magazine; an advertisement in a vehicle, such as a train, a bus, etc.; commercial scene in TV or radio broadcasting; a manual information transfer means using a mail, or a telephone; and the internet.

35 Still further, the "information communication network" includes all networks to communicate with the consumer, which is represented by the internet, a

personal computer communication, etc.

Below, embodiments of the present invention will be explained in detail with reference to the drawings.

Figure 1 is a flowchart of basic operation according to the present invention (No. 1). This embodiment is in the case that an article supplier is a clock maker. That is, a consumer creates a watch having his favorite design. As explained in detail below, the clock maker provides the design basic information to design the watch design through the information communication network, and the consumer returns the original design information of the watch through the same network.

First, the clock maker (M) as the article supplier notifies a watch design creation service to the consumer (C) through the information communication network (for example, the internet (24H service) (step S1). The consumer who received the information requests the design software and the parts digital information through the internet, an E-mail, etc. (step S2).

Further, besides parts digital information which are provided from the clock maker, there are other parts digital information which are independently created by the consumer. In this case, a digital image taken by a digital camera, a digital image scanned from a photograph, etc., are included in the parts digital information.

Next, the clock maker provides parts digital information, which can be supplied from the clock maker to the consumer, and the design software (or the design basic information based on the design software) to combine these parts to the consumer through the network (step S3). The consumer who received the design software (or the design basic information based on the design software) utilizes the design software and the parts digital information, combines the parts digital information which are independently created by the consumer, and creates the original design information as



the completed watch (step S4). At that time, the consumer selects materials of the article constituent parts, selects additional functions added to the article constituent parts, and selects functions of the article (step S4'). Further, the consumer sends the original design information to the clock maker through the network, and requests production of the watch (step S5).

Next, the clock maker produces the watch in accordance with the original data recorded in the original design information which received from the consumer (step S6). In this case, the consumer may check situation of production at the clock maker through the network (step S6'). Further, the clock maker completes the watch and provides it to the consumer (step S7). In this case, as explained in Fig. 10, when the clock maker considers situation that the color tone of the dial-plate is slightly different between the image on the display and an actual color tone of the dial-plate, the clock maker confirms the color tone of the dial-plate to the consumer, if the consumer wishes to do.

Figure 2 is a flowchart of basic operations according to the present invention (No. 2). In this embodiment, the clock maker temporarily stores the design basic information on the storage medium and provides it to the consumer. The consumer returns the original design information to the clock maker using the floppy disk (FD).

First, the clock maker (M) notifies the watch design creation service to the consumer (C) through the information communication network (for example, the internet (24H service) (step S11). The consumer who received the information requests the design software and the parts digital information through the internet, E-mail, a letter, etc. (step S12). Next, the clock maker sends the storage medium (for example, a CD-ROM) which stored parts digital information, which can supply from the clock maker, and the design software (or the design

basic information based on the design software) to combine these parts to the consumer through the network (step S13).

5       The consumer who received the CD-ROM sets it in his personal computer. The consumer combines the parts digital information which were supplied by the clock maker, and the parts digital information which were independently created by the consumer if necessary (for example, a dial-plate on which an original message is  
10       written), and creates the original design information (step S14). At that time, the consumer selects materials of the article constituent parts, selects the additional functions added to the article constituent parts, and selects the functions of the article (step S14').  
15       Further, the consumer sends the original design information to the clock maker through the network and requests production of the watch (step S15).

20       Next, the clock maker produces the watch in accordance with the original data recorded in the floppy disk which received from the consumer (step S16). In this case, the consumer may check situation of production at the clock maker through the internet. Further, the clock maker completes the watch and provides it to the consumer (step S17).

25       In this case, the consumer may checks current situation of production (below, production situation) at the clock maker for the ordered watch through the information communication network, for example, the internet (step S16'). Concretely, there is the following  
30       method. That is, the clock maker inputs situation of production of the wrist watches, which were ordered by the consumers, for each watch in a homepage of the internet. Each user's name and telephone number are attached in the production situation data in the homepage  
35       as keywords for search. Accordingly, the consumer accesses the homepage of the clock maker and can obtain the production situation data for the wrist watch which

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when the question "Where do you play ?" is displayed, the consumer selects either "outdoor" or "street" (see Fig. 15).

5       Next, the consumer selects the custom sample  
      (step S23). That is, the consumer selects the dial-  
      plate, hands, the watch case, the color, etc., to create  
      the original watch in accordance with the following  
      steps. That is, the consumer designs the original watch  
10       in the "TOKEI KOBOU" (see Figs. 16 to 29). Next, the  
      watch created on the custom image is held (step S24). A  
      maximum of three watches can be held in this embodiment  
      (see Fig. 30). Conservation of the image is executed by  
      clicking "HOLD". Further, an order data preparing image  
      is displayed on the screen (Figs. 32 and 33).

15       Figure 4 shows concrete steps of the main menu  
      display in step S21 (see Fig. 14).

      First, as the main menu, "EXPLANATION", "READ",  
      "IMAGE CHECK", "DESIGN", "HOLD IMAGE" and "END" are  
      displayed (step S31). Next, when "EXPLANATION" is  
20       clicked, the image is moved to the abstract of the  
      present invention (step S33). Next, when "READ" is  
      clicked, order data created by the consumer are read and  
      the image is moved to the custom display (step S34).  
      Next, "IMAGE CHECK" is clicked, the image is moved to the  
25       display of the image check (see Fig. 15 and step S35).  
      Next, "DESIGN" is clicked, the image is moved to the  
      display of the custom sample pattern representing the  
      sample pattern (see Fig. 17 and step S36). Next, "HOLD  
      IMAGE" is clicked, the image is moved to the display of  
30       the holding image (see Fig. 30 and step S37). Next,  
      "END" is clicked, the current program is finished  
      (step S38).

      Figure 5 shows concrete steps of the image check in  
      step S22 shown in Fig. 3.

35       First, three questions are displayed in order to  
      ~~execute the image check. When all questions are~~  
      answered, the result of the image check is displayed (see

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displayed on the sample display section. As a result, these parts are replaced to the whole of the image of the watch so that it is possible to design the desired watch. Further, it is possible to revise each part, such as

5 dial-plate, etc., any number of times, by confirming the whole of design coordinate. Further, it is possible to see the original design (step S55).

In this case, the "original design" means the parts digital information which are designed by the consumer

10 himself. As the parts digital information, there are computer graphics created by the consumer, digital image taken by a digital camera by the consumer, and another digital image scanned by a scanner from an illustration which was drawn by the consumer, or a picture which was

15 taken by the consumer. The clock maker arranges the original design to the surface of the dial-plate (i.e., time indicating side), bonds the printed original design to the surface, and provides the dial-plate as the original created by the customer himself and as the only

20 one of its type in the world.

Next, the message is input to the selected dial-plate (step S56). The consumer can input optional words or sentences as the message. As shown in Fig. 21, for example, "Happy Birthday" can be input as the message.

25 In this embodiment, it is possible to optionally arrange the message to four locations as shown in the drawing. In four locations, the customer can select the message to either any one favorite location or all locations. In this case, the number of messages is optional in four

30 locations. Further, although the length of the message may be limited in accordance with the space, it is possible to optionally set the length to a predetermined extent. Further, it is possible to optionally use a font and color of characters in the predetermined extent.

35 Next, when "MAGNIFYING GLASS" is clicked, the image of the dial-plate is enlarged (see Fig. 21 and step S57).

In the case of Fig. 21, "ILLUSTRATION/CHAR ACTERS" is

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shown instead of "MESSAGE". Finally, "HOLD" is clicked, the image is moved to the holding of the image (Fig. 30) ~~to hold the custom watch which is currently created~~ (step S58). Further, "READ" is clicked, the ~~dial-plate~~ created by the consumer is read out from the file, and it is displayed on a vacant space within six spaces (see Fig. 25).

Figure 7 shows concrete steps of selection of the custom sample in step S23 shown in Fig. 3 (No. 2).

First, a list of dial-plates is displayed (step S61). In this case, it is possible to display twenty-four dial-plates, at a maximum, within one screen. The consumer selects one favorite dial-plate from twenty-four dial-plates, and the selected dial-plate is enlarged (see Fig. 20). When "CONFIRM" is clicked on the enlarged image, the image is returned to Fig. 18, the dial-plate is displayed on six spaces. Further, a title and a name of artist are displayed on the enlarged window.

Next, the window for confirming the dial-plate is displayed (see Fig. 20 and step S62). Further,

"CONFIRM", "CANCEL", "HOLD" and "RETURN" are displayed (step S63). When "CONFIRM" is clicked, Figure 18 is displayed and the selected dial-plate is displayed on the vacant space. When "CANCEL" is clicked, the confirmation window is closed (step S65), and Figure 19 is displayed.

Figure 8 shows concrete steps of selection of the custom sample in step S23 shown in Fig. 3 (No. 3).

First, when the illustration/characters, (for example, "Happy Birthday") is input (step S71). Next, when "MAGNIFYING GLASS" is clicked, the case, the time indicator, hands, the dial-plate, the crown, the message, etc., are enlarged and displayed (step S72). Next, an image file of the created dial-plate is read (step S74).

Next, when "READ" is clicked, a file dialog window is displayed and the image file of the dial-plate is opened (step S75). The image is displayed on the right eight spaces. In this case, the flowchart for design

samples besides dial-plate, time indicator, hands, watch case, band, crown, etc., are omitted and only the explanation is given on the display below.

5 First, selection of dial characters is explained in Fig. 23. First, "TIME INDICATOR" is clicked, and changeable time indicators are displayed. When a bar, a dot, an alphabet, etc., is clicked, twelve time indicators which are indicated by different colors are displayed on the screen, and one of time indicators is selected. Then, the image is changed to the selected time indicator. Further, "HOLD" is clicked, the image is moved to the holding image of the custom watch which is created currently.

15 Next, the input of the message is explained below (see Fig. 24). First, a favorite font (for example, Gothic font, Ming font, etc.,) is selected from different fonts. The color of character is selected from ten colors displayed on the right side. When "HANDS" is clicked, one hand is selected from five kinds of hands. When "HOLD" is clicked, the image is moved to the holding image. Next, the case is selected as shown in Fig. 26. When "WATCH CASE" is clicked, changeable watch cases are displayed, and the desired watch case is selected therefrom. When the desired watch case is selected, the color of the watch case of the watch is changed. When "HOLD" is clicked. the image is moved to the holding image.

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30 As shown in Figs. 27, 28 and 29, the band, the buckle, the crown, etc., are selected based on the steps similar to the above.

35 In this case, as shown in step S4' in Fig. 1 and in step S14' in Fig. 2, for example, it is possible to select the constituent material of the watch case when selecting the watch case. That is, it is possible to select either the watch case made of resin, such as plastics, or the watch case made of metal.

Further, as shown in Fig. 35, it is possible to



select the constituent material of the watch band when selecting the watch band. That is, it is possible to select the watch band having favorite material from the group of band made of urethane foam, leather, or metal.

5 The metal band is selected in Fig. 35. When "BAND/BUCKLE", which is indicated to the left side of the display, is selected, "METAL" is selected on the right upper side. In Fig. 35, two kinds of metal bands are shown in different colors.

10 Further, when the watch case or watch band is selected, it is possible to read the original design (i.e., parts digital information) created by the consumer himself. The clock maker arranges the original design to, for example, the front surface of the band, and  
15 *SL 8 A* provides it to the customer as the customer's originally-designed band and as the only one of its kind in the world. When the material of the band is made of resin, such as urethane foam, an original design is printed. The watch case is also printed.

20 As shown in Fig. 36, it is possible to select whether the function to light up the hands as additional function is added or not. That is, the light-up function is desired, it is possible to select the hands having luminous material, for example, fluorescent material or  
25 noctilucent coating. The noctilucent material is provided to, for example, a tip of the hand as shown in the right upper portion of the drawing.

Further, for example, several kinds of modules are provided to drive the hands, and it may be possible to  
30 optionally select the favorite hands, by the consumer. As a result, the consumer can select the counting function which is one of functions provided in the article. Further, it is possible to select a module for measuring external environment, for example, a module  
35 having the pressure measuring function by a pressure sensor, and a module having the temperature measuring function by a temperature sensor.

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Figure 9 shows concrete steps of display of the holding image in step S24 shown in Fig. 3. First, as shown in Fig. 30, the holding image is displayed, and "ORDER", "HOLD", "CHANGE OF DESIGN", "DELETE", etc., are displayed (step S81). Any one of watches is selected when the customer orders next, and "ORDER" is clicked (see Fig. 31, step S82). Further, when the image is held, any one of watch is selected and "HOLD" is clicked (see Fig. 31 and step S83). Next, when the design is changed after selection of optional watch, "CHANGE" is clicked (step S84). Further, the image is moved to the custom image so as to change the design coordinate. When "DELETE" is clicked, the selected watch is erased. As shown in Fig. 31, the final confirmation image is displayed in order to confirm the ordered watch (step S85). Further, "CONFIRM" is clicked (step S86), and the display is moved to Figure 32. When "CANCEL" is clicked, the display is moved to three holding image (see Fig. 30).

Figure 10 is a flowchart for confirming color tone. First, the clock maker asks the consumer whether confirmation of color tone is necessary or not (see Figs. 30 and 33). The consumer requests the confirmation of the color tone from the clock maker (step S92). The clock maker prints some samples which some sample colors are combined with peripheral color tones in accordance with the request, and sends them to the consumer (step S93).

The consumer selects either the sample color or a color close thereto in accordance with the sample information, and returns them to the clock maker (step S94). The clock maker produces the dial-plate based on the color selected by the consumer in accordance with the answer of the consumer (step S95).

Figure 11 shows concrete steps of preparation of order data in step S25 shown in Fig. 3. First, the consumer prepares the order data (step S101). Next, the

order information is input to a predetermined vacant column on the display (step S102). Next, "CONFIRM SUM OF MONEY" is clicked (step S103), Figure 33 is displayed. Further, "PREPARE ORDER" is clicked, and the order  
5 information is recorded on a harddisk or a floppy disk (step S104). In this case, Figure 34 is in the case that three watches were already held and the fourth watch is added. When the fourth watch is held, the watch which was already held is replaced to the fourth watch.

10 Figure 12 is a structural view of a system according to the present invention. The internet is utilized as the information communication network. In subscribers (1 to N) as consumers, for example, when the consumer 1 accesses a host computer H provided in the clock maker  
15 which is an article supplier through the internet, a CD-ROM is provided from the clock maker to the consumer 1. The consumer 1 creates the original design watch in accordance with the above-mentioned steps, records the originally-design watch into the floppy disk (FD) and  
20 sends it to the clock maker. The clock maker produces the original watch and sends the finished watch to the consumer. In the drawing, ME represents an internal memory provided in the host computer, but it may be possible to utilize an external memory. A control  
25 program is stored in the memory.

In Fig. 12, as shown by dotted line, the clock maker can provide the design software (or the design basic information based on the design software) having the same contents as the CD-ROM instead of the CD-ROM by utilizing  
30 the internet, or another way, to the consumer. Further, it is possible to send the original design information from the consumer to the clock maker by utilizing the internet without use of the floppy disk.

35 Figure 13 is an explanatory view for explaining contents of ~~storage medium~~ used in the present invention. The storage medium is provided ~~from the clock to the consumer~~, and the CD-ROM shown in Fig. 12 corresponds to

SA11

5 this drawing. The reference number 2 represents parts  
digital information. As the parts digital information,  
the dial-plate information, the pointers information, the  
watch case information, the color information, the wrist  
band information, the buckle information, the time  
indicator information, the order information, the message  
information, etc., are recorded in the CD-ROM. The  
reference number 1 represents another control program  
necessary for parts selection.

10 Concretely, this storage medium stores a program to  
execute the following processes to the computer, i.e., a  
process for providing parts digital information  
indicating watch constituent parts; a process for  
selecting parts digital information corresponding to the  
15 watch design desired by the consumer from the parts  
digital information; and a process for recording parts  
digital information selected by the consumer to the  
predetermined storage medium. Further, the storage  
medium stores an order information to order from the  
20 consumer.

#### CAPABILITY OF UTILIZATION IN INDUSTRY

As explained above, according to the present  
invention, an article design, for example, in the watch  
design creation, the consumer can create the  
25 specification of his own original watch by communicating  
with a substitute of the clock maker, i.e., parts design  
information and design software. Further, by  
communicating between the clock maker and the consumer  
through the predetermined information communication  
30 means, it is possible to perfectly reflect the  
constituent parts (for example, the dial-plate)  
originally designed by the consumer on the watch.  
Further, in the present invention, by displaying a  
plurality of completed wrist watches on the same screen,  
35 the consumer can easily compare a plurality of wrist  
watches created by the consumer himself, and can  
evaluates them. Accordingly, if evaluation by himself is

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low, the consumer again creates the watch.

5 Still further, if the consumer requests, he can check situation of creation of the article so that the consumer can wait for delivery of the watch without any problems. Accordingly, it is possible to establish an order-sale system in which the consumer can order without any problems. Therefore, it is possible to realize large capability of utilization in industry.